

Labeeb Hasan Zaker

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Education and Awards

McMaster University

Hamilton, ON

- *Bachelor of Engineering in Mechatronics Engineering Co-op,*

April 2023

Honors: Dean's List (April 2019, April 2020) , Hack The Valley IV 2020 Best Use of MongoDB cluster.

Related Coursework: Engineering Computation, Programming for Mechatronics, Data Structures and Algorithms.

Extracurricular Activities: Software Developer || Google Developer Student Club, Software Developer || DeltaHacks

Work Experience

Magna International

Brampton, ON

- *Software Developer Intern*

May 2021 - August 2022

- Increased code runtime efficiency by **25%**: Developed a multi-threaded **Python** program to run multiple internal applications in parallel.
- Enhanced team efficiency by **25%**: Developed and integrated an algorithm in **C++** to automate software executions over multiple inputs.
- Refactored over **2000+** lines of code in **C++** to improve code **legibility** and enhance **optimization** by **10%**.
- Architected new **firmware** for **PCAN Router Pro FD** to parse **64 bytes** messages into **8 bytes** messages, creating a more **robust communication** among different electronics systems inside the vehicle.
- Developed **CAN** message reader function using **bit shifting operations** in **C++**, to interpret messages sent by the vehicle.
- Designed **Python GUI** using **OpenCV** in **Numpy**, to plot points based on detections from ultrasonic sensors on the vehicle.

Skills

Programming Languages: JavaScript, MongoDB, Python, TypeScript, LaTeX, C/C++, MATLAB, SQL, Rust

Frameworks: Node.js, Express.js, React.js, Vue.js, Bootstrap 4, Serialport.js, Google Maps API, jQuery

Personal Projects

RateYourLandlord (Winner: Best Use of MongoDB Cluster)

Web Application

- *HTML5, CSS 3, JavaScript, Node.JS, Express.JS, MongoDB*

github.com/zakerl/rate-my-landlord-webapp

Orchestrated a team of 5 to develop a web-based application for tenants to post reviews about landlords at desired locations.

- Integrated **Google Maps API** to add multiple markers, improving search efficiency by **13%**.
- Developed landlords and reviews schema models using **MongoDB**, to create and store around **125** landlords and reviews.
- Architected an algorithm using **node-geocoder** to extract longitude, latitude and addresses of locations.

AlgoVisualiser

Web Application

- *React.js, CSS3, JavaScript, Node.js, Express.js*

github.com/zakerl/AlgoVisualiser

Engineered a Sorting Algorithms Visualiser platform to animate various sorting algorithms.

- Implemented **useEffect** hook to update the website based on user interaction.
- Constructed a random array generator using **useState** hook and an **input slider** to generate an array of bars between **3** and **80**.
- Created animations using **JavaScript** and **CSS3**, rendered by **React** depending on sorting algorithm, improving render speed by **5%**.

Pacemaker

Embedded Systems Software

- *React.js, CSS3, JavaScript, Node.js, Express.js, Serialport.js, Firebase*

github.com/zakerl/pacemaker-project

Designed User Interface that takes inputs from user and outputs egram for visualisation.

- Developed UI using **React.js** that allows users to configure available pacing modes.
- Implemented **get** and **post** requests to send data through the backend using **Javascript Fetch API**.
- Configured serial communication to pass input data to the board using **Serialport.js** and **Node.js**, resulted in **100%** accuracy.

Mac Carpool

Web Application

- *React.js, CSS3, JavaScript, Node.js, Express.js, Stripe.js, MongoDB*

github.com/zakerl/DeltaHacksVI-1

Collaborated in a team of 4 to build a car-pooling web application for people commuting to or from McMaster.

- Integrated **Stripe.js** to provide users with a secure gateway for payment, thus increasing security by **10%**.
- Improved interactivity using **MongoDB** to create a search bar that filters available rides based on input.
- Implemented login and register features using **MongoDB** and **useState** hook to allow users to login and save personal data.